

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) ~~[[A]]~~ An isolated DNA which comprises a ~~consisting of the~~ base sequence ~~shown by~~ of SEQ ID NO: 1 ~~in the sequence listing or its~~ the complementary sequence of SEQ ID NO: 1, ~~or a sequence containing part or whole of these sequences.~~
2. (Currently amended) ~~[[A]]~~ An isolated DNA which hybridizes with the DNA according to claim 1 under ~~[[a]] stringent conditions comprising hybridization at 65 °C and a washing treatment at 65 °C with buffer solution containing 0.1 × SSC, 0.1% SDS, and which encodes a polypeptide having glucose~~ ~~[[and/or]]~~ or fructose transporter function.
3. (Currently amended)~~[[A]]~~ An isolated DNA which encodes the following polypeptide (a) or (b):~~(a) a polypeptide which comprises an~~ consisting of the amino acid sequence ~~shown by~~ of SEQ ID NO: 2 ~~in the sequence listing, (b) a polypeptide which comprises an amino acid sequence where in one or a few amino acids are deleted, substituted or added in the amino acid sequence shown by~~ SEQ ID NO: 2 ~~in the sequence listing, and which has~~ having glucose ~~[[and/or]]~~ or fructose transporter function.
4. (withdrawn) A polypeptide which comprises an amino acid sequence shown by SEQ ID NO: 2 in the sequence listing.

5. (withdrawn) A polypeptide which comprises an amino acid sequence wherein one or a few amino acids are deleted, substituted or added in the amino acid sequence shown by SEQ ID NO: 2 in the sequence listing, and which has glucose and/or fructose transporter function.
6. (Currently amended) A method for producing a polypeptide which has glucose [[and/or]] or fructose transporter function, wherein the DNA_x according to any one of claims 1 to 3, is incorporated into an expression vector and expressed by introducing the recombinant expression vector into a host cell.
7. (withdrawn) An antibody which is induced by using the polypeptide according to claim 4 or 5, and which binds to the polypeptide specifically.
8. (withdrawn) The antibody according to claim 7, wherein the antibody is a monoclonal antibody.
9. (withdrawn) The antibody according to claim 7, wherein the antibody is a polyclonal antibody.
10. (Currently amended) A method for producing an animal tissue cell expressing a polypeptide which has glucose [[and/or]] or fructose transporter function, wherein the DNA according to any one of claims 1 to 3 is introduced into an animal tissue cell.
11. (Currently amended) The method for producing an animal tissue cell expressing a polypeptide which has glucose [[and/or]] or fructose transporter function according to claim 10, wherein the animal tissue cell is a tissue cell of rat kidney, an epithelial cell

derived from porcine kidney, an epithelial cell derived from canine kidney or an epithelial cell derived from opossum kidney.

12. (Currently amended) The method for producing an animal tissue cell expressing a polypeptide which has glucose ~~[[and/or]]~~ or fructose transporter function according to claim 10, wherein the animal tissue cell is HEK293, a transfected human embryonic kidney cell line.
13. (Currently amended) An animal tissue cell expressing a polypeptide which has glucose ~~[[and/or]]~~ or fructose transporter function, which is produced by the method according to ~~any one of claim[[s]] 10 to 12.~~
14. (withdrawn) A method for screening a substance having a glucose and/or fructose transporter function-regulating activity, wherein an effect of a test substance on glucose transport function is measured with the use of the animal tissue cell expressing a polypeptide which has glucose and/or fructose transporter function according to claim 13.
15. (withdrawn) A non-human animal model which develops renal diabetes caused by a defect in renal glucose reabsorption, whose gene function to express a polypeptide which has glucose and/or fructose transporter function shown by SEQ ID NO: 2 in the sequence listing is deficient in its chromosome.
16. (withdrawn) The non-human animal model which develops renal diabetes according to claim 15, wherein the deficiency in the gene function to express a polypeptide which has glucose and/or fructose transporter function is deficiency in a function of a gene which

expresses a polypeptide which has glucose and/or fructose transporter function shown by SEQ ID NO: 1 in the sequence listing.

17. (withdrawn) A method for screening a preventive/therapeutic drug for renal diabetes caused by a defect in glucose reabsorption, wherein a test substance is administered to the non-human animal model which develops renal diabetes caused by a defect in renal glucose and/or fructose reabsorption according to claim 15 or 16, and glucose reabsorption ability of the non-human animal model, or a cell, a tissue or an organ of the non-human animal model is measured/evaluated.
18. (Currently amended) A probe for diagnosing the functionality of the glucose ~~[[and/or]]~~ or fructose transporter ~~function~~ comprising ~~whole or part of an~~ the antisense strand of the base sequence according to claim 1.
19. (withdrawn) A microarray or a DNA chip for diagnosing glucose and/or fructose transporter function, wherein at least one DNA according to any one of claims 1 to 3 is immobilized.
20. (Currently amended) A ~~pharmaceutical kit~~ kit for diagnosing the functionality of the glucose ~~[[and/or]]~~ or fructose transporter ~~function~~, wherein ~~the antibody according to anyone of claims 7 to 9 and/or~~ comprising the diagnostic probe for diagnosing according to claim 18 ~~is prepared~~.
21. (withdrawn) A method for diagnosing glucose and/or fructose transporter function, wherein a sample is obtained from a test substance, and the expression of the gene according to claim 1 in the sample is measured.

22. (withdrawn) A method for diagnosing glucose and/or fructose transporter function, wherein the measurement of the gene expression according to claim 21 is conducted with the probe for diagnosing glucose and/or fructose transporter function according to claim 18, or with the microarray or the DNA chip for diagnosing glucose and/or fructose transporter function according to claim 19.
23. (withdrawn) A method for diagnosing glucose and/or fructose transporter function, wherein a sample is obtained from a test substance and cultured, and the polypeptide according to claim 4 produced by the expression of the gene in the sample is measured.
24. (withdrawn) A method for diagnosing glucose and/or fructose transporter function, wherein the measurement of the polypeptide according to claim 23 is conducted with the antibody according to anyone of claims 7 to 9.
25. (withdrawn) A method for diagnosing a renal disease, wherein the diagnosis of glucose and/or fructose transporter function according to any one of claims 21 to 24 is measurement of glucose and/or fructose transporter function in a renal disease.
26. (withdrawn) A method for regulating glucose and/or fructose transporter function in an animal tissue cell, wherein the DNA according to any one of claims 1 to 3 is introduced in to an animal tissue cell.
27. (withdrawn) A method for regulating glucose and/or fructose transporter function in an animal tissue cell, wherein the expression of the DNA according to claim 1 is suppressed in an animal tissue cell.

28. (withdrawn) A method for regulating glucose and/or fructose transporter function in an animal tissue cell , wherein the expression of the DNA according to claim 1 is suppressed in an animal tissue cell by introducing whole or part of an antisense strand of the DNA base sequence according to claim 1 into an animal tissue cell.
29. (withdrawn) The method for regulating glucose and/or fructose transporter function in an animal tissue cell according to anyone of claims 26 to 28, wherein the animal tissue cell is an animal kidney cell.
30. (New) An animal tissue cell expressing a polypeptide which has glucose or fructose transporter function, which is produced by the method according to claim 11 or 12.